



# STATE OF ALABAMA SURFACE MINING COMMISSION

Page 1 of 24

Permit Number:P- 4000

License Number:L- 652

## PERMIT TO ENGAGE IN SURFACE COAL MINING OPERATIONS

Pursuant to **The Alabama Surface Mining Control and Reclamation Act of 1981**, as amended, **ALA. Code Section 9-16-70 et. seq. (1975)** a permit to engage in Surface Coal Mining Operations in the State of Alabama is hereby granted to:

Southland Resources, Inc.  
P.O. Box 770  
Cottondale, AL 35453

Such operations are restricted to 256 acres as defined on the permit map and located in:

\*See attachment for legal description

This permit is subject to suspension or revocation upon violation of any of the following conditions:

1. The permittee shall conduct Surface Coal Mining and Reclamation Operations in accordance with the plans, provisions and schedules in the permit application.
2. The permittee shall conduct operations in a manner to prevent damage or harm to the environment and public health and safety and shall notify ASMC and the public in accordance with ASMC Rule 880-X-8K-.10 of any condition which threatens the environment or public health and safety.

## Attachment A

### LEGAL DESCRIPTION

P-4000-63-26-S

SE/SW & SW/SW of Section 28, SE/SE of Section 29, NE/NE, SE/NE & NE/SE of Section 32, SE/NE, SW/NE, NW/NE, NE/SE, NW/SE, NE/SW, NW/SW, NE/NW, SE/NW, SW/NW & NW/NW of Section 33; ALL IN TOWNSHIP 20 SOUTH, RANGE 8 WEST, TUSCALOOSA COUNTY, ALABAMA.

## **CONDITIONS TO BE PLACED ON PERMIT P-4000-63-26-S PAGE #1**

3. Surface coal mining operations are restricted to those areas for which sufficient bond has been posted with ASMC. On the date of issuance of this permit, bond was posted only for increment 6 consisting of 3 acres as defined on the permit map. Increment 1 will be mined first after bond is posted.
4. No mining disturbance is to occur on any part of the permit on which legal "right of entry" has not been obtained. When such rights are "pending" the applicant shall submit acceptable evidence, to the Director, that such rights have been obtained according to ASMC Regulation 880-X-8D-.07.
5. No disturbance is to occur on any properties on which land use comments from legal owners of record are "pending" prior to the applicant providing acceptable comments.
6. No disturbance is to occur in the 300' setback area to any occupied dwelling prior to the applicant providing acceptable evidence to ASMC of its having secured a waiver of each subject area signed by the owner of the dwelling.
7. No mining disturbance shall occur within the 100' setback of any public road or the relocation of any public road prior to the applicant providing acceptable evidence, to the Director, of its having secured approval for a waiver from the appropriate jurisdictional authority and specific written waiver from ASMC.
8. The permittee shall notify the ASMC and seek consultation with the US Fish and Wildlife Service if:
  - a. The permit is modified in any way that causes an effect on species or Critical Habitat listed under the Endangered Species Act of 1973.
  - b. New information reveals the operation may affect Federally protected species or designated Critical Habitat in a manner or extent not previously considered or
  - c. A new species is listed or Critical Habitat is designated under the Endangered Species Act that may be affected by the operation.
9. The permittee shall contact the ASMC and consult with the Alabama Historic Preservation Officer if the permit is modified or if previously unknown archaeological or historic resources are discovered on the permit area. Upon discovery of previously unknown artifacts or archaeological features the permittee shall cease operations until the Alabama Historic Preservation Officer approves resumption of operations.
10. The permittee may only conduct tree removal between October 15 and March 31 within project area.

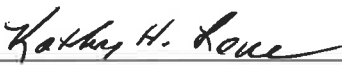
**CONDITIONS TO BE PLACED ON PERMIT P-4000-63-26-S PAGE #2**

11. If tree removal is necessary outside October 15 to March 31 the permittee must conduct an Indiana Bat and/or Northern Long-eared Bat Presence/Absence Survey and submit FWS approval of the survey to ASMC prior to tree removal within the project area.

**DATE ISSUED: July 14, 2021**

**EFFECTIVE DATE: July 14, 2021**

**EXPIRATION DATE: July 14, 2026**

  
\_\_\_\_\_  
**Kathy H. Love, Director**

## **FINDINGS TO BE PLACED ON PERMIT NO.: P-4000 PAGE 1**

The ASMC, acting by and through its Director, hereby finds, on the basis of information set forth in the application or from information otherwise available, that --

1. The permit application is complete and accurate and the applicant has complied with all requirements of the Act and the regulatory program.
2. The applicant has demonstrated that reclamation as required by the Act and the regulatory program can be accomplished under the reclamation plan contained in the permit application.
3. The proposed permit area is:
  - (a) Not within an area under study or administrative proceedings under a petition, filed pursuant to Chapter 880-X-7 to have an area designated as unsuitable for surface coal mining operations;
  - (b) Not within an area designated as unsuitable for mining pursuant to Chapter 880-X-7 or subject to the prohibitions or limitations of Section 880-X-7B-.06 and Section 880-X-7B-.07 of this chapter; or
4. For mining operations where the private mineral estate to be mined has been severed from the private surface estate, the applicant has submitted to the Regulatory Authority the documentation required under Section 880-X-8D.07 and Section 880-X-8G-.07 of this chapter.
5. The Regulatory Authority has made an assessment of the probable cumulative impacts of all anticipated coal mining on the hydrologic balance in the cumulative impact area and has determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.
6. The applicant has demonstrated that any existing structure will comply with Section 880-X-2B-.01, and the applicable performance standards of Chapter 3 or 10.
7. The applicant has paid all reclamation fees from previous and existing operations as required by 30 C.F.R., Subchapter R.
8. The applicant has satisfied the applicable requirements of Subchapter 880-X-8J.

## **FINDINGS TO BE PLACED ON PERMIT NO.: P-4000 PAGE 2**

9. The applicant has, if applicable, satisfied the requirements for approval of a long-term, intensive agricultural, postmining land use, in accordance with the requirements of 880-X-10C-.58(4) and 880-X-10D-.52(4).
10. The operation will not affect the continued existence of endangered or threatened species, or result in destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).
11. The Regulatory Authority has taken into account the effect of the proposed permitting action on properties listed or eligible for listing on the National Register of Historic Places. This finding is supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources, or a documented decision that the Regulatory Authority has determined that no additional protection measures are necessary.
12. For a proposed remining operation where the applicant intends to reclaim in accordance with the requirements of Section 880-X-10C-.56 or 880-X-10D-.49, the site of the operation is a previously mined area as defined in Section 880-X-2A-.06.
13. Surface coal mining and reclamation operations will not adversely affect a cemetery.
14. After application approval but prior to issue of permit, ASMC reconsidered its approval, based on the compliance review required by Section 880-X-8K-.10(2)(a) in light of any new information submitted under 880-X-8D-.05(8).
15. The applicant has submitted the performance bond or other equivalent guarantee required under Chapter 880-X-9 of the ASMC Rules prior to the issuance of the permit.
16. For mining operations where a waiver is granted from the 100' setback from a public road according to 880-X-7B-.07, the interests of the public and affected landowners have been protected.

## FINDINGS TO BE PLACED ON PERMIT NO.: P-4000 PAGE 3

17. The Regulatory Authority has taken into account the effect of the proposed permitting action on properties listed or eligible for listing on the National Register of Historic Places (NRHP). PE LaMoreaux & Associates, Inc. (PELA) conducted a Phase I Cultural Resource Assessment for approximately 440 acres in Tuscaloosa County, Alabama in December 2009. Based on the survey, two isolated finds were recorded during the field investigation. Due to the lack of archaeological or historical sites recorded, PELA's opinion is the project area be cleared of any further cultural resources investigations. MRS Consultants, LLC (MRS) conducted a Phase I Cultural Resource Survey on March 7-29 and April 3-4, 2019 for approximately 561 acres in Tuscaloosa County, Alabama. As a result of these investigations, three sites have been added to the Alabama State Site File (ASSF). Designated as sites 1Tul155, 1Tul156, and 1Tul157, two of the sites are largely disturbed and severely eroded and are not considered eligible for the NRHP (1Tul156 and 1Tul157). Site 1Tul155 consists of a relatively small Middle Woodland site with the potential for intact subsurface features to exist. The site is considered to be potentially eligible for the NRHP and, as such, the proposed surface mine would have an adverse effect on the prehistoric resource. Based on these findings, MRS recommends that a majority of project area for the proposed Southland Resources, Camp Cherry Austin Mine in Tuscaloosa County, Alabama be cleared in regard to cultural resources. No significant cultural resources will be affected. Avoidance of site 1Tul155 is recommended. By a letter dated January 27, 2010 the Alabama Historic Commission (AHC) after review of the resources assessment conducted by PELA determined that the project activities would have no adverse effect on cultural resources eligible for or listed on the NRHP. Therefore AHC concurs with the proposed project activities. By letter dated September 20, 2019 AHC, based on the MRS resource assessment concurs that the proposed mine permit application will have no effect on cultural resources listed on or eligible for the NRHP, with this one stipulation in place – avoidance and protection of site 1Tul155. Site 1Tul155 will be avoided and protected with a 100 foot buffer maintained around the site boundary during earthmoving activities. ***Archeological site 1Tul155 has been removed from the project area, therefore no conditions in regards to site 1Tul155 will be placed on the permit at this time.*** This finding is supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources or a documented decision that the Regulatory Authority has determined that no additional protection measures are necessary. Concerns for unknown resources, which might be discovered during mining, have been made conditions of the permit.
18. In a letter dated November 27, 2018 the Alabama Department of Conservation and Natural Resources (ADCNR) states that a biological survey be conducted by trained professionals to ensure that no sensitive species are jeopardized by the development activities. The closest sensitive species are recorded as occurring approximately 0.1 miles from the subject site. In a habitat assessment performed by McGehee Engineering Corp (MEC) in January, February and March of 2019 portions of the proposed boundary are identified as potential summer roost habitat for the Indiana bat (*Myotis sodalis*) and Northern Long-eared (NLEB) bat (*Myotis septentrionalis*). Potential habitat for the White fringeless orchid and Mohr's Barbara's button was explored and was not discovered. Stream corridors are highly impacted

## **FINDINGS TO BE PLACED ON PERMIT NO.: P-4000 PAGE 4**

from dumping, tornado damage and siltation from runoff of previous pre-law mining and timber removal. There is no habitat for the other listed, threatened and endangered species. No evidence was found or observed for the presence or possible presence of the other listed species. MEC stated that tree removal activities would be limited to October 15 – March 31. In the event that timber removal is necessary outside the recommended timber harvesting timeframe of October 15<sup>th</sup> through March 31<sup>st</sup>, Southland Resources, Inc. conduct and get approval of a Presence/Absence Survey prior to any disturbance within the designated potential habitat areas. By comments dated August 6, 2019 the US Fish and Wildlife Service (FWS) acknowledges the permittee has stated that tree removal is only to occur between October 15 and March 31, therefore FWS concurs that no impacts to the Indiana bat and/or NLEB are anticipated as a result of your proposed project. No other federally listed species/critical habitat are known to occur in the project area. By letter dated November 30, 2020 the US Army Corps of Engineers (USACE) Nationwide Permit 49- Project Number SAM-2019-00431-CMS states the project will involve the placement of fill into 3,355 linear feet (lf) of intermittent stream, 1.28 acres of wetlands and 0.30 acres of open waters incidental to surface coal re-mining activities. Based upon the Pre- Construction Notification (PCN) the USACE has issued the following special condition: 1) Provide a net increase in aquatic resource functions when mining is complete, reclamation of water of the U.S. on the project site shall be conducted in accordance with the “Aquatic Resource Improvement Plan” submitted in the September 24, 2020 PCN. The plan shall be implemented concurrent with ASMC reclamation. The Alabama Surface Mining Commission finds that the proposed operation will not jeopardize the continued existence of endangered or threatened species or critical habitat thereof.

19. The proposed permit area is:

- a. Not within an area under study or administrative proceedings under a petition, filed pursuant to Chapter 880-X-7 to have an area designated as unsuitable for surface coal mining operations.
- b. Not within an area designated as unsuitable for mining pursuant to Chapter 880-X-7 or subject to the prohibitions or limitations of Section 880-X-7B-.06 and Section 880-X-7B-.07 of this chapter.

**DATE: July 14, 2021**

  
**Mark A. Woodley**  
Permit Manager

cc: I & E, Permit File



**MEMORANDUM**

**TO:**

Office of Surface Mining Reclamation and Enforcement

Alabama Department of Environmental Management

Alabama Historic Preservation Officer

The District Engineer  
U.S. Corps of Engineers

Alabama Department of Labor  
Division of Safety & Inspection

BLM - District Office

State of Alabama  
Abandoned Mine Land Reclamation

Tuscaloosa County Commission

U.S. Fish & Wildlife Service

Mr. Keith Guyse, Fish & Game Division

**FROM:** KATHY H. LOVE, DIRECTOR

**RE: PERMANENT PROGRAM PERMIT FOR:**

**Permit P-4000-63-26-S (Camp Cherry Austin Mine) Southland Resources, Inc.**

Pursuant to the Alabama Surface Mining Commission Regulation 880-X-8K-.12(2), we are hereby notifying you of the issuance of the above permit.

You may also view a copy of this permit at our web address of:

<http://surface-mining.alabama.gov/PermitDecisions.html>

Enclosed for your information and file is a copy of the permit which shows the legal description of the mine site.

/mw

## **CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT**

**Southland Resources, Inc.**  
**Camp Cherry Austin Mine**  
**ASMC: P-4000**

**HUC12: 031601120306**  
**NPDES : AL0083887**

As required under Federal Public Law 95-87, Section 510(b)(3), the Alabama Surface Mining Commission (ASMC) must find in writing the following proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The applicant must submit a determination of probable hydrologic consequences of mining and reclamation operations in Part II.H of the permit application for areas both on and off the mine site. This determination will allow the ASMC to assess probable cumulative impacts of all anticipated mining activities on the surface and ground water hydrology of the permit and adjacent areas as stated in Federal Public Law 95-87, Section 507(b)(11) and ASMC Rule 880-X-8E-.06(1)(g). The following assessment and findings are intended to fulfill the above.

### **I. GENERAL INFORMATION**

The proposed Southland Resources, Inc. P-4000 is for a surface coal mining operation and contour mining operation encompassing 256 acres including mining acres and haul/access roads, impoundments, stockpiles, equipment storage areas and diversion ditches. The operation plan also includes the removal and processing of sandstone.

The proposed mine site is located in part of Sections 28, 29, 32 & 33, Township 20 South, Range 8 West, Tuscaloosa County, Alabama as seen from the Lake Nicol USGS 7.5 minute Quadrangle.

This permit area is located in the Laurel Branch - Bluff Creek watershed area. There is a small portion of the permit area located in the Hurricane Creek - Black Warrior watershed, however no drainage from this small area will drain to the watershed. It will be routed to a basin that will drain to the Laurel Branch - Bluff Creek watershed. See Map No. 1 for the general area.

#### **A. Geology of the Warrior Coal Basin**

The Pottsville Formation of Early and Middle Pennsylvanian age in Alabama is divided into four fields: the Warrior, Cahaba, Coosa and Plateau fields. All fields were once connected by an unbroken area of coal measures, however separation occurred as a result of folding, faulting and erosion of uplifted areas.

The Warrior coal field is a gently folded or flat-lying area classified as the Cumberland Plateau. It lies in a large, gentle monoclinical structure that extends west into central Mississippi. The regional dip is towards the southwest. This regional southwest dip is interrupted by 2 anticlines (the Blue Creek anticline and the Sequatchie anticline) and three synclines or basins (the Blue Creek basin, Coalburg syncline and Warrior syncline).

The Warrior field has numerous normal faults that trend north and northwest up to 4 miles in length with up to 200 feet of displacement ("Geology of Coal Resources of the Coal-Bearing Rocks of Alabama, Alabama Geological Survey Bulletin 1182-B").

During the beginning of the Pennsylvanian age (approximately 320 million years ago), most of Alabama was still part of a shallow, warm ocean basin. The transgressions and regressions of the seas lead to the rhythmic cycle of sandstone, underclay, coal beds, and shale with zones of marine and brackish water fossils that rest on the basal resistant conglomerate orthoquartzite of the Boyles sandstone formation. This sequence immediately repeats itself with similar rocks (marine shale, sandstone or clay, coal seam, freshwater shale and sandstone). This appears to show the rise of sea level, depositing marine sediments, then the falling of sea level allowing the coal producing forests to grow. This was followed by an influx of river deposited sands and muds, which would rapidly accumulate plant material. Then, the sea would rise again repeating the process.

At the end of the Pennsylvanian, the uplift of the region left the coal bearing ecosystem behind. During this periods of uplift, no new sediments could be deposited for at least 200 million years. The gap in time between the Pennsylvanian deposition and the Cretaceous deposition resulted in an unconformity that allows for surface coal mining to exist in the Alabama coal fields.

## **B. Historical and Active Coal Mines**

Within the Laurel Branch - Bluff Creek watershed are three active coal mine permits and two expired coal mine permits. The active permits are the Cahaba Resources, LLC Davis Creek West (ASMC permit P-3871), and the Warrior Met Coal Mining, LLC Mine No. 4 (ASMC permit P-3260). ASMC permit P-3871 is a surface mining operation and ASMC permit P-3260 is an underground mining operation and both are located in the northern portion of the Laurel Branch - Bluff Creek watershed approximately 13.5 miles upstream of the Camp Cherry Austin Mine. The expired permits within this watershed include the Cahaba Resources, LLC Deerlick Mine (ASMC P-3872) and the Murray Alabama Minerals, LLC Kellerman Prep. Plant (ASMC P-3199). Both of these permits are located approximately 3 miles upstream, north of the Camp Cherry Austin Mine. This information is shown in Table No. 1. The Laurel Branch - Bluff Creek watershed is shown in Map No. 2 (The maps show an 'active' to the east of the Camp Cherry Austin Mine. This is a portion of the deadhead road for P-3859 which has received a phase III bond release).

## **II. CUMULATIVE IMPACT AREA (CIA)**

The Cumulative Impact Area (CIA) is that area, including the permit area, within which impacts resulting from the proposed operation may interact with the hydrologic impacts of all other past, current and anticipated coal mining on the surface and groundwater systems.

The CIA for surface water for Permit P-4000 has been defined as the area inside the Laurel Branch - Bluff Creek watershed that encompasses the P-4000 permit area. There are no other active or expired permits in the same area of the watershed to be able to define a "cumulative effect".

The CIA for groundwater for this permit is limited to the proposed permit area. The CIA has been selected based upon the Commission's assessment of the possible hydrologic impacts, which may occur as a result of mining operations. The subsurface hydrologic components considered in this assessment include all significant water-bearing units in, and within the vicinity of, the proposed permit and adjacent areas. Other areas of proposed, future mining are not known at this time; however, no cumulative impacts to groundwater are expected due to no other active or expired permits in the same area of the watershed to be able to define a "cumulative effect". Groundwater occurs in openings along fractures and bedding planes generally in a sandstone unit within 250 to 350 ft. of the surface. Both the surface water and the groundwater CIA are confined to the permit area.

## **Geologic/Hydrogeologic Information**

### **i. Geology**

The proposed P-4000 permit area is located in the Warrior Basin of the Appalachian Plateaus Physiographic Province. The area is underlain by the Coker and Pottsville Formation, and pre-Pennsylvanian rocks. The Pottsville Formation contains coal beds and is overlain by the Coker Formation. The Pottsville Formation consists of alternating beds of gray sandstone, conglomerate, siltstone, and shale with beds of coal and underclay. The formation is thick in this area, approximately 4,500 feet. Except for the conglomeritic sandstone at the base of the formation, few lithologic horizons can be correlated regionally. (Hydrologic Assessment, Eastern Coal Province Area 23, Alabama USGS Water-Resources Investigations Open-File Report 80-683).

The Coker Formation unconformably overlies the Pottsville Formation in the area. The Coker consists of unconsolidated sand, gravel and clay with prominent sand and gravel beds at or near the base of the formation. Strata generally trend northwest and generally dip southwest 30 to 40 ft/mi. The maximum thickness of the Coker is 475 feet, however most surface coal mining that requires the removal of the Coker Formation has occurred where the thickness of the Coker is considerably less than 100 feet. (Hydrologic Assessment, Eastern Coal Province Area 23, Alabama).

This mine site will remove the Guide (if found), Brookwood, Milldale and Carter coal seams of the Brookwood Group. Overburden thickness above the Carter coal seam ranges from approximately 40' to 140' deep. Cretaceous material and spoil cover the permit area.

### **Potentially Acid- and Toxic-Forming Materials**

Six drill holes were used to describe the lithology for the area, with five being used for overburden analysis. Drill cutting were taken every 5 ft. or change in lithology to at least 5 feet below the coal seam for analysis of potentially acid- and toxic forming properties (with the exception of MW/IB-30815 being sampled at a one-foot interval). For these samples overburden analyses were conducted including paste pH, total sulfur, maximum potential acidity and neutralization potential in order to obtain the acid base account of the overburden. Potentially acid- and toxic-forming materials are those that exhibit a pH of less than 4.0 s.u. or a deficiency in calcium carbonate equivalent of at least 0 tons per 1,000

tons of material (T/KT).

## **ii. Surface Water**

The proposed permit area is located in the Warrior River Basin and drains to an unnamed tributary to Brush Creek and an unnamed tributary to Rocky Branch. The unnamed tributary to Brush Creek drains to Brush Creek, which drains to the Black Warrior River north of the mine site. The unnamed tributary to Rocky Branch drains to Rocky Branch which drains to the Black Warrior River west of the permit area. Surface water from the permit area will be routed through ten sediment basins/rock filters before being discharged into state waters in accordance with the Alabama Department of Environmental Management's (ADEM) National Pollution Discharge Elimination System (NPDES) permit AL0083887.

ADEM has classified Brush Creek and Rocky Branch as "Fish and Wildlife." According to 335-6-11-.02, "use classifications apply water quality criteria adopted for particular uses based on existing utilizations, uses reasonably expected in the future, and those uses not now possible because of correctable pollution but which could be made if the effects of pollution were controlled or eliminated. Of necessity, the assignment of use classifications must take into consideration the physical capability of waters to meet certain uses." The Black Warrior River is classified as "Fish and Wildlife" and "Public Water Supply" through a large portion of the Black Water River, including where Brush Creek and Rocky Branch flow into it.

To characterize the existing quality and quantity of water within Brush Creek and the unnamed tributary to Rocky Branch, baseline data were obtained and submitted in the permit application. Downstream surface water monitoring site SW-1 on Brush Creek was sampled on 7 occasions between 04/19/2019 and 12/16/2019. Upstream/downstream surface water monitoring site SW-2 on Brush Creek was sampled on 7 occasions between 04/19/2019 and 12/16/2019. Downstream surface water monitoring site SW-3 at the headwaters on the unnamed tributary to Rocky Branch was sampled on 7 occasions between 04/19/2019 and 12/16/2019. In addition to monthly baseline monitoring, a high flow and low flow metals sample was included with baseline information. Table 2, 2a. and 2b. included at the end of this assessment presents the baseline data.

## **iii. Ground Water**

According to the "Geohydrology and Susceptibility of Major Aquifers to Surface Contamination in Alabama, Area 6" by the U.S. Geological Survey, Water-Resources Investigations Report 87-4113, "the Pottsville Formation consists chiefly of sandstone, conglomerate, siltstone, and shale with beds of coal and underclay. Water in the Pottsville aquifer occurs under confined conditions due to sharp contrast in permeability within the aquifer. Groundwater usually occurs at depths of less than 200 feet in secondary features such as openings along fractures and bedding planes. Only small amounts of groundwater suitable for domestic use are available in the weathered deposits. The quantity of water available to wells throughout the aquifer depends on the size and extent of the water-

bearing openings.” Large water supplies are generally not available from the Pottsville Formation and no municipal wells tap the Pottsville Formation within the study area.

Rocks in the aquifer are tightly cemented and have little primary porosity and permeability. They contain water in secondary features and solutioning is not an effective agent for the enhancement of secondary features due to its silicic lithology (as compared to carbonate aquifers in the area). Due to the folded and faulted geologic structure, the Pottsville Formation is not continuous from one area to another. Groundwater movement between aquifers is restricted due to the confining beds, and movement within the aquifer generally is from hills and highland areas to streams and other areas of natural discharge.

The Coker Formation consists of a basal nonmarine zone of gravel, marine sand and clay. A clay zone is usually present at the top of the Coker. In areas where the Coker is less than 100 feet thick, only the basal beds remain. Also, the Coker is not used extensively downdip where shallower aquifers are available.

According to the Hydrologic Assessment, Eastern Coal Province Area 23, Alabama by the US Geological Survey Water-Resources Investigations Open-File Report 80-683, rain is the source of groundwater in the area. Annual rainfall averages 54 inches per year, which nearly 5 percent of recharges the ground water reservoirs. According to the “Hydrologic Assessment, Eastern Coal Province Area 23”, ground water movement generally is to the southwest. The Coker Formation dips toward the southwest about 30 feet per mile and the water moves through the more permeable lower part which contains sand and gravel beds and overlies the Pottsville Formation.

Little is known about recharge and ground water movement in the Pottsville Formation; however, according to the permit application, the main direction of water is reliant on the contact between the Pottsville and Coker Formations and towards streams. Water may move in other directions based on topographic features of the area or fracture systems in the formation. It is also mentioned that because of the perched water tables and irregular lensing properties of the Pottsville Formation that water levels are unpredictable and areal correlations are only possible within short distances.

Ground water in the Pottsville occurs in sandstone beds and in fractures and bedding planes. The openings are small, and yield to wells range from less than 10 gal/min to as much as 50 gal/min. The depth to water is generally less than 30 feet in stream valleys and more than 50 feet in hills and ridges.

### **Domestic Wells**

A well inventory of the proposed permit area revealed 56 residences within a ½ mile radius of the proposed permit site. Six residents have wells, however only four are used as primary water sources. All other residents within the ½ mile radius of Camp Cherry Austin Mine obtain water from Citizen Water Service, Inc.

### **Company Installed Wells**

Groundwater monitoring sites used for describing the local characteristics within and adjacent to the Camp Cherry Austin Mine include groundwater monitoring wells MW-30806, MW-30814 and MW-30815.

Groundwater monitoring well MW-30806 is drilled to a depth of 180' at an elevation of 297.89' msl. It is drilled below the Carter coal seam into sandstone. Water averages a depth of 46.5'.

Groundwater monitoring well MW-30814 is drilled to a depth of 100' at an elevation of 387.94' msl. It is drilled to below the Carter coal seam into sandstone. Water averages a depth of 21.3'.

Groundwater monitoring well MW-30815 is drilled to a depth of 200' at an elevation of 281.25' msl. It is drilled to below the Carter coal seam into sandstone with shale streaks.

Baseline data was submitted for these monitoring wells. This data is summarized in Table 3 at the end of this assessment. Groundwater characteristics show acidic pH conditions and varying high iron and manganese which could be attributed to the previous mining. The well locations are shown on Map No. 1.

### **B. Coal Processing Waste**

Coal processing waste (gob and slurry) will not be generated or disposed of at the site.

### **C. Material Damages**

With respect to the CHIA, material damage to the hydrologic balance means the changes to the hydrologic balance caused by surface mining and reclamation operations to the extent that these changes would significantly affect present and potential uses as designated by the regulatory authority. This includes the hydrologic impact that results from the cumulation of flows from all coal mining sites in a cumulative impact area. Examples of material damage are: permanent destruction of a major regional aquifer; temporary contamination of an aquifer in use that cannot be mitigated; and solute contributions to streams above receiving stream standards.

A CHIA is based on the best currently available data and is a prediction of mining-related impacts to the hydrologic balance. Permittees (and permit applicants) are required to monitor water quality and quantity. Exceeding material damage thresholds might also cause significant reduction of the capability of an area to support aquatic life, livestock and wildlife communities.

### III. FINDINGS

Based on the information presented above, the following findings have been made relative to the proposed permit area.

#### A. Potentially Acid- and Toxic-Forming Materials

Laboratory analyses of the bedrock overlying the Carter coal seam show that the overburden at the Camp Cherry Austin Mine contains excess tons/acre of neutralization potential; a neutralization potential of +5.47, and an acid-base account of +2.16 (tons  $\text{CaCO}_3$ /1000 tons overburden). It should be noted that an acid base account is not a water quality prediction tool, but instead is used to support the ability of vegetation to be established and supported. According to the "Coal Mine Drainage Prediction and Pollution Prevention in Pennsylvania" publication by the Pennsylvania Department of Environmental Protection, excess neutralization potential most likely produces alkaline drainage.

All of the overburden holes shows the potential for acid forming material at certain intervals, though not throughout any one entire hole. Some of the potential acid forming material is found in the previously mined spoil, and there were concerns about contamination from above spoil in some samples. The increased potential for acid forming material found in the spoil material of MW/OB-30806 and CCA-3 require a special handling plan that is included in the permit application.

The spoil material from the surface down to the Brookwood pit bottom in the areas where the spoil is shown to have potential for acid forming material will be handled according to the Acid Forming Material Handling Plan. It includes loading and hauling the acid forming material (spoil) to the side of the pit, where it will be placed on a base that is limed with agricultural lime. The material will be tested for paste pH, neutralization potential and potential acidity and the acid-base account determined. The liming requirements will be calculated using the following formula:

$$\frac{(-AB - 5)}{1000} \times 7840 = T$$

AB = Acid-Base Account (when less than -5)

T = tons of agricultural lime per acre

P = agricultural lime ( $\text{CaCO}_3$  purity in decimal)

7840 = tons of material on one acre

1000 = 1000 tons of  $\text{CaCO}_3$  equivalent

Once the required amount of lime is determined, the spoil will be placed and rough graded with agricultural lime spread on top. A minimum of four feet of best available non-acid, non-toxic material will be placed within the spoil area a minimum of ten feet away from the highwall, a minimum of 10 feet up from the pit floor and a minimum of 50 feet away from a major drain.



## **B. Surface Water**

Based on laboratory analysis of the samples collected at surface water sites SW-1 and SW-2 on Brush Creek, the water contains low TSS, low pH, and moderate to high concentrations of iron, high concentrations of manganese, high sulfates and little to no alkalinity. Surface water monitoring site SW-3 at the headwaters of the unnamed tributary to Rocky Branch show variable TSS, low pH, high iron and manganese and no alkalinity.

The surface water sites on Brush Creek show impaired waters potentially from previous mining. Low pH values and high metals concentrations including nickel and zinc, some cadmium and copper as well as selenium and arsenic were detected in baseline analysis.

Changes in the quantity and quality of the waters in the streams draining the site are expected to be minimal due to the proposed mining activities, including special handling of potential acid forming material. Impact has already occurred at this site and proper reclamation activities should help to improve, and/or not further degrade the streams.

During mining, runoff from the disturbed areas will be diverted into sediment basins (or rock filters) that are designed to retain all settleable solids, skim and retain all floating solids, and provide adequate detention volume and time to minimize the contribution of suspended solids and dissolved solids into the receiving streams. Effluent from the sediment basins will be monitored by the permittee in accordance with NPDES permit requirements issued by ADEM. The effluent will be chemically treated, if necessary, in accordance with the NPDES permit. The basins will be monitored quarterly through final bond release in order to characterize and document any effects the mining may have on the surface-water hydrologic balance.

Post-Mining water quality and quantity estimates provided by the applicant are based on several factors:

1. Baseline surface water quality
2. Estimated impact during mining
3. Size of the permit area compared to the size of the watershed
4. Amount of previous mining within the watershed

According to the permit application, this mine site is expected to have a negligible increase in base flow, average flows, and peak flow rates relative to the baseline conditions. The NPDES maximum and average limitations set forth by ADEM for this mine site are as follows: pH limit is between 6.0 – 8.5 s.u., TSS maximum limit is 70 mg/L and the average is 35 mg/L, Fe maximum limit is 6.0 mg/L and the average is 3.0 mg/L with a 4-Day average of 3.45 mg/L and the Mn maximum limit is 4.0 with the average being 2.0 mg/L. Limits and monitoring requirements for these parameters can be found in both the Hydrologic Monitoring Plan for this permit, as well as the ADEM NPDES permit (AL0082414).

Any potentially acid- and toxic-forming materials will undergo relatively quick burial that will minimize exposure of the materials with the atmosphere; thus lessening the potential for Acid Mine Drainage to develop. This, along with the sediment basins, vegetation of the disturbed areas and erosion control practices as well as special handling should serve to lessen impacts to the streams and surface water bodies. Should any increase in mineralization occur in the surface waters as a result of the mining operations, it is anticipated the levels will diminish and return to pre-mining concentrations once mining and reclamation activities are complete. Table 4 shows the post-mining water quality projections based on the downstream site Brush Creek.

### **C. Ground Water**

The proposed operations are not expected to have a permanent adverse impact on the overall quality of the ground water at the site or surroundings. The main aquifer in this area is a sandstone unit located below the Carter Coal Seam. Also, area has been extensively mined, and due to the size of the proposed permit with respect to the watershed area any effects to the groundwater system would be considered negligible in comparison. According to the permit application as well as published reports, groundwater movement is in the south and west directions, however groundwater movement in this area is influenced by streams, as well as local surface topography and faulting.

## **IV. CONCLUSION**

The assessment of probable cumulative impacts of the Southland Resources, Inc. P-4000 Camp Cherry Austin Mine finds the proposed operations have been designed to prevent material damage to the hydrologic balance outside the proposed permit area.

**Table 1**  
**Mining Operations in the Cumulative Impact Area**  
**P-4000**

Permit No.	Permittee	Permit Name	Date Issued	Acres*	Description	Coal Seam(s)	Permit Status**
P-3871	Cahaba Resources, LLC	Davis Creek West Mine	5/31/2007	753	Surface Mine	Clemets Johnson Brookwood	Reclamation Activities
P-3260	Warrior Met Coal Mining, LLC	Mine No. 4	3/03/1983	2325	Underground / Prep. Plant		Active
P-3872	Cahaba Resources, LLC	Deerlick Mine	11/10/2005	380	Surface Mine	Brookwood Milldale Johnson	Reclamation Activities – Expired Permit
P-3199	Murray Alabama Minerals, LLC	Kellerman Prep Plant	1/20/1983	570	Prep. Plant		Reclamation Activities – Expired Permit
* Acres at Issuance of P-4000							
** At Issuance of P-4000							

**Table 2**  
**Ranges/Averages of Surface-Water Quality/Quantity**  
**Stream Points**  
**P-4000**

<b>Parameter</b>	<b>SW-1 Downstream Brush Creek</b>	<b>SW-2 Downstream/Upstream Brush Creek</b>	<b>SW-3 Downstream UT to Rocky Branch</b>
Discharge Rate (cfs)	0.255 - 6.3797 (1.70)	0.0815 - 3.5697 (0.798)	0.0429 - 1.0191 (0.417)
Field pH (S. U.)	3.58 - 5.28	3.47 - 6.61	3.54 - 5.65
Total Suspended Solids (mg/L)	4 - 18 (8.4)	2 - 22 (7.3)	4 - 80 (21.9)
Total Iron (mg/L)	3.73 - 14.73 (9.95)	0.53 - 1.64 (1.02)	5.58 - 71.13 (19.2)
Total Manganese (mg/L)	4.37 - 15.97 (10.89)	4.83 - 16.39 (13.86)	6.47 - 19.4 (13.2)
Specific Conductivity 25 °C ( $\mu$ mhos/cm)	316 - 849 (620)	280 - 776 (645)	342 - 736 (581)
Acidity (mg/L)	17 - 58 (34.6)	6 - 39 (25.3)	35 - 90 (58.6)
Alkalinity (mg/L)	0 - 2 (0.3)	0 - 12 (1.7)	0 - 40 (5.7)
Sulfates (mg/L)	63 - 350 (223)	96 - 343 (230.6)	75 - 341 (197.7)

Average values are set in parentheses.  
Averages calculated as geometric means.

**Table 2a**  
**Low-Flow Metals Analysis**  
**P-4000**

<b>Parameter</b>	<b>SW- 1 (9/16/19)</b>	<b>SW-2 (9/16/19)</b>	<b>SW-3 (9/16/19)</b>
<b>Flow</b>	<b>0.255 CFS</b>	<b>0.0815 CFS</b>	<b>0.0429 CFS</b>
Antimony (µg/L)	BML	BML	BML
Arsenic (µg/L)	0.34	0.41	0.79
Beryllium (µg/L)	BML	BML	BML
Cadmium (µg/L)	0.15	0.26	BML
Chromium (µg/L)	BML	BML	BML
Copper (µg/L)	1.53	3.92	BML
Lead (µg/L)	0.39	0.83	BML
Nickel (µg/L)	82.47	69.52	22.63
Selenium (µg/L)	1.5	2.33	BML
Silver (µg/L)	BML	BML	BML
Thallium (µg/L)	BML	BML	BML
Zinc (µg/L)	66.45	76.18	24.65

BML – Below Measurable Limits

**Table 2b**  
**High-Flow Metals Analysis**  
**P-4000**

<b>Parameter</b>	<b>SW- 1 (4/19/19)</b>	<b>SW-2 (4/4/19)</b>	<b>SW-3 (12/13/19)</b>
<b>Flow</b>	<b>6.3797 CFS</b>	<b>3.5697 CFS</b>	<b>1.02CFS</b>
Antimony (µg/L)	BML	BML	BML
Arsenic (µg/L)	0.58	0.37	1.28
Beryllium (µg/L)	BML	BML	BML
Cadmium (µg/L)	0.14	BML	0.18
Chromium (µg/L)	BML	BML	BML
Copper (µg/L)	2.42	1.00	BML
Lead (µg/L)	0.81	BML	0.92
Nickel (µg/L)	40.01	28.64	77.24
Selenium (µg/L)	BML	0.97	5.04
Silver (µg/L)	BML	BML	BML
Thallium (µg/L)	BML	BML	0.14
Zinc (µg/L)	50.11	36.37	113.6

BML – Below Measurable Limits

**Table 3**  
**P-4000**  
**Ground Water Baseline Data**

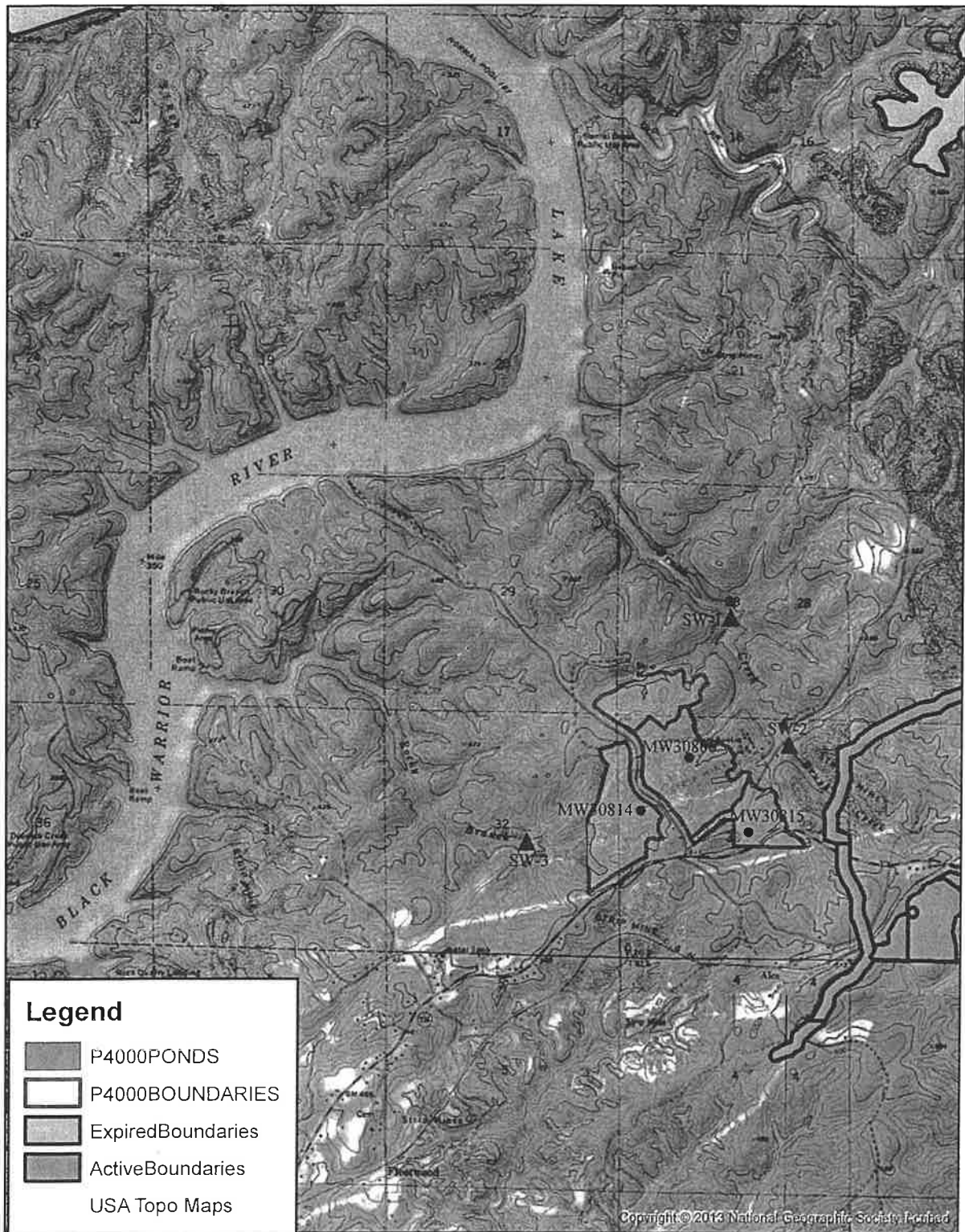
Parameter	MW-30806	MW - 30814	MW-30815
Water Level (feet below surface)	49.0 – 55.0 (53)	20.0 – 23.0 (21.2)	63.0 – 65.0 (64.1)
Specific Conductivity 25 °C (μmhos/cm)	1178 - 1393 (1291.9)	335 – 408 (363)	131 – 531 (205.3)
Total Iron (mg/L)	87.38 – 123.2 (105.9)	0.04 – 1.46 (0.38)	1.57 – 15.56 (6.08)
Total Manganese (mg/L)	22.52 – 37.35 (31.5)	14.35 – 17.34 (15.2)	0.31 – 1.27 (0.63)
Field pH (s.u.)	3.26 – 4.37	3.72 – 4.97	6.04 – 11.06
Sulfates (mg/L)	560 – 750 (690.4)	84 – 122 (103)	0.1 – 45 (12.5)
Acidity (mg/L)	460 – 639 (533.3)	77 – 167 (128)	0 – 9 (1.8)
Alkalinity (mg/L)	0	0	35 – 88 (59.5)

Average values are set in parentheses.  
Averages calculated as geometric means

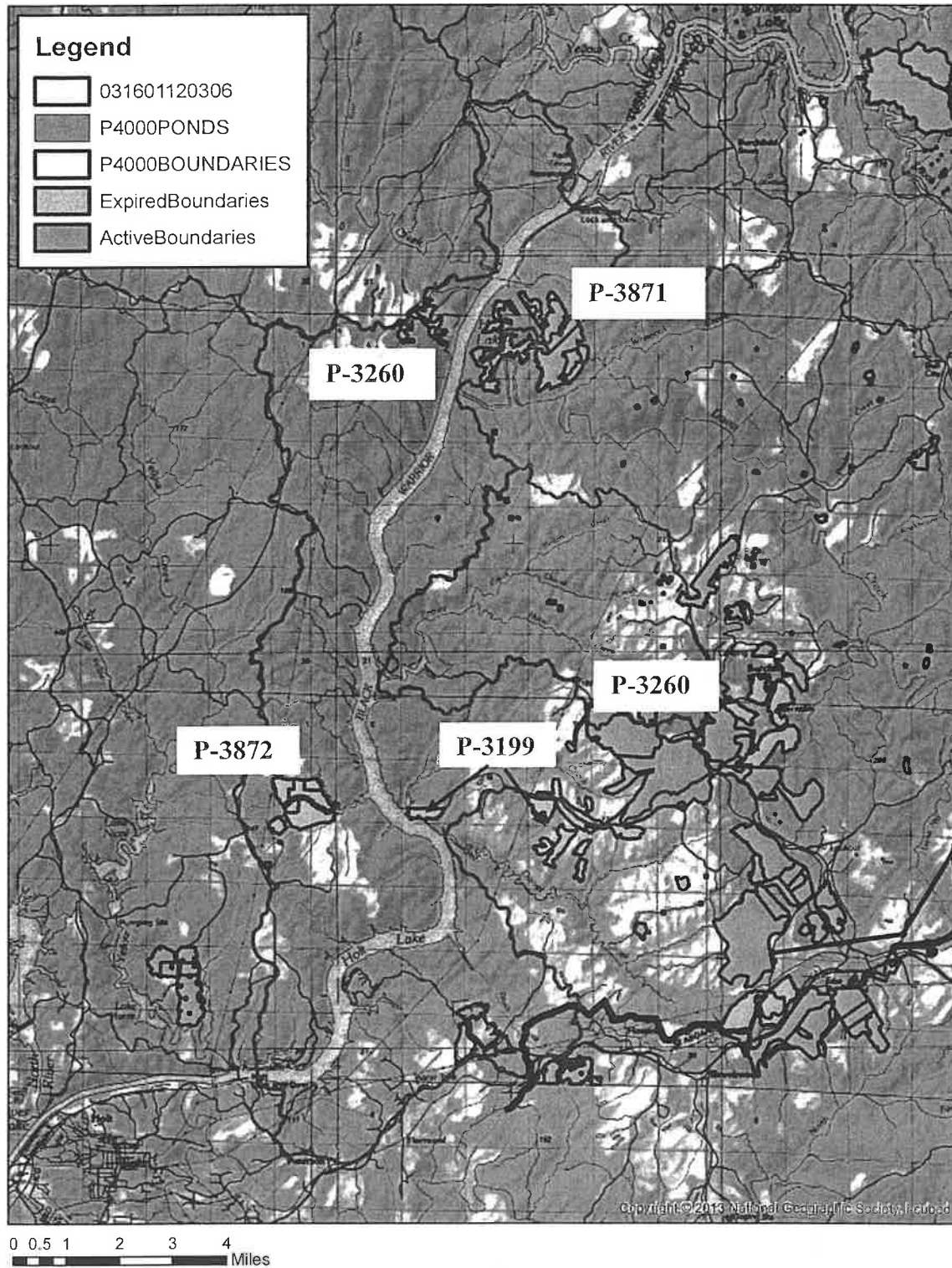
**Table 4**  
**P-4000**  
**Estimate of Post-Mining, Average Event**  
**Surface-Water Quality SW-1**  
**Drainage Area 1.96 square miles**

Parameter	Estimated Value
Flow (cfsm)	1.6
pH (s.u.)	4.8
Iron (mg/L)	6.46
Manganese (mg/L)	7.09
Specific Conductivity 25 °C (μmhos)	760
TSS (mg/L)	12

Map No. 1  
 Southland Resources, Inc.  
 Carter West Mine P-4000



Map No. 2  
Southland Resources, Inc.  
Carter West Mine P-4000  
Laurel Branch - Bluff Creek Watershed



1